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Sent: Tuesday, October 19, 2004 9:07 AM
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Subject: 09/855,750 sequence search request

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Please search the following sequence(s) in commercial and interference databases:

1) Standard search of SEQ ID NO:1 against nucleic acid databases.

2) Standard search of SEQ ID NO:2 against nucleic acid databases.

Please save results to diskette.

Thank you very much.

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IUBMB Enzyme Nomenclature

EC 6.2.1.3

Common name: long-chain-fatty-acid—CoA ligase

Reaction: ATP + a long-chain carboxylic acid + CoA = AMP + diphosphate + an acyl-CoA

Other name(s): acyl-CoA synthetase; fatty acid thiokinase (long chain); acyl-activating enzyme; palmitoyl-CoA synthase; lignoceroyl-CoA synthase; arachidonyl-CoA synthetase; acyl coenzyme A synthetase; acyl-CoA ligase; palmitoyl coenzyme A synthetase; thiokinase; palmitoyl-CoA ligase; acyl-coenzyme A ligase; fatty acid CoA ligase; long-chain fatty acyl coenzyme A synthetase; oleoyl-CoA synthetase; stearoyl-CoA synthetase; long chain fatty acyl-CoA synthetase; long-chain acyl CoA synthetase; fatty acid elongase; LCFA synthetase; pristanoyl-CoA synthetase; ACS3; long-chain acyl-CoA synthetase I; long-chain acyl-CoA synthetase II; fatty acyl-coenzyme A synthetase; long-chain acyl-coenzyme A synthetase; FAA1

Systematic name: acid:CoA ligase (AMP-forming)

Comments: Acts on a wide range of long-chain saturated and unsaturated fatty acids, but the enzymes from different tissues show some variation in specificity. The liver enzyme acts on acids from C_6 to C_{20}; that from brain shows high activity up to C_{24}.

Links to other databases: BRENDA, EXPASY, KEGG, UM-BBD, ERGO, CAS registry number: 9013-18-7

References:

1. Bakken, A.M. and Farstad, M. Identical subcellular distribution of palmitoyl-CoA and arachidonoyl-CoA synthetase activities in human blood platelets. *Biochem. J.* 261 (1989) 71-76. [Medline UI: 89374118]

2. Hosaka, K., Mishima, M., Tanaka, T., Kamiryo, T. and Numa, S. Acyl-coenzyme-A synthetase I from *Candida lipolytica.* Purification, properties and immunochemical studies. *Eur. J. Biochem.* 93 (1979) 197-203. [Medline UI: 79169257]

3. Nagamatsu, K., Soeda, S., Mori, M. and Kishimoto, Y. Lignoceroyl-coenzyme A synthetase from developing rat brain: partial purification, characterization and comparison with palmitoyl-coenzyme A synthetase activity and liver enzyme. *Biochim. Biophys. Acta* 836 (1985) 80-88. [Medline UI: 85280527]

4. Tanaka, T., Hosaka, K., Hoshimaru, M. and Numa, S. Purification and properties of long-chain acyl-coenzyme-A synthetase from rat liver. *Eur. J. Biochem.* 98 (1979) 165-172. [Medline UI: 79236369]

[EC 6.2.1.3 created 1961, modified 1989]

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